The months of November and December were wet and cold in Singapore as we entered the rainy phase of the monsoon season. In line with the lower temperatures, electricity demand in both months were lower compared to October. Demand in December was further depressed by the holiday season. As a result, the monthly Uniform Singapore Energy Price (USEP) fell to $71.24/MWh in December which was the lowest monthly level for the year.

In the last month of 2019, we welcomed a new market participant (MP) – a wholesale market trader for demand side participation. With three wholesalers registered for demand side participation now, I look forward to higher levels of demand response and interruptible load provision in the wholesale electricity market.

Aside from the new MP, we also registered seven new facilities in the last two months of the year. Additionally, two rule changes were approved by the Energy Market Authority in November. One tightened the existing default levy process and formulae, while the other improved the efficiency of the outage planning process. Details of these rule changes can be found on EMC’s website.

We were privileged to round off the year by sharing Singapore’s electricity market reform journey with two esteemed visitors from the Kingdom of Saudi Arabia. Visits like this are testimonies to the NEMS’ success, and the hosting of such visits reaffirms EMC’s commitment to sharing our knowledge and experience with countries that are embarking on market reform.

At the close of yet another fruitful year, I would like to thank all our NEMS stakeholders for your continued friendship and support. I look forward to another successful year of partnership in 2020.

Toh Seong Wah
Chief Executive Officer
Visitors to EMC

The Kingdom of Saudi Arabia is embarking on a journey to reform and privatise its power generation sector as part of the Kingdom's Vision 2030 economic reform programme. We were honoured to host Osama Khawandanah, Chief Executive Officer, and Hamed Al-Saggaf, Executive Director, IPP & Renewable Energy Sector, from the Saudi Power Procurement Company (SPPC) during their visit to Singapore in December to learn about our experience in deregulating our electricity sector.

During their visit to EMC, we shared Singapore’s market reform journey, as well as the operations and governance structure of the National Electricity Market of Singapore (NEMS). We also arranged for our guests to visit other NEMS stakeholders, including our regulator the Energy Market Authority, for additional perspectives on Singapore’s electricity market.

EMC is committed to promoting the development of competitive electricity markets. We regularly share our experience, knowledge and expertise with countries embarking on the path of market reform through various platforms, including hosting visits like this.

Market Update

Overview of USEP and supply cushion – Jan to Dec 2019

The daily average Uniform Singapore Energy Price (USEP) ranged between $67.45/MWh and $168.35/MWh in November, and between $53.62/MWh and $87.24/MWh in December. The monthly average USEP was $88.79/MWh in November and dropped 19.8 percent to $71.24/MWh in December, which was the lowest monthly level for the year.

November’s USEP declined 5.9 percent compared to October’s despite a tighter supply cushion. November’s supply cushion fell 1.1 percentage points as a result of a bigger drop in supply (2.0 percent) compared to the decline in demand (0.5 percent). November’s fuel oil price was 9.5 percent lower than October’s.

In December, demand dropped a further 2.9 percent while supply retreated another 0.7 percent. As the drop in demand outweighed the fall in supply, the supply cushion expanded 1.7 percentage points and resulted in a lower monthly average USEP of $71.24/MWh.
New Entrants to the NEMS

New market participant and facilities registered in the NEMS

One new market participant (MP) joined the National Electricity Market of Singapore (NEMS) in December:

<table>
<thead>
<tr>
<th>Market Participant</th>
<th>Market Participant Class</th>
<th>Date Registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enel X Singapore</td>
<td>Wholesale Market Trader</td>
<td>13 December</td>
</tr>
</tbody>
</table>

With the above addition, there are now 16 wholesale market traders in the NEMS. In addition, seven new facilities were registered by four MPs in November and December:

<table>
<thead>
<tr>
<th>Market Participant</th>
<th>Facility Type</th>
<th>Capacity (MW)</th>
<th>Date Registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sembcorp Solar Singapore</td>
<td>Intermittent Generation Source (IGS)</td>
<td>1.320</td>
<td>1 November</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.280</td>
<td>15 November</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.120</td>
<td>6 December</td>
</tr>
<tr>
<td>Cleantech Solar Singapore Assets</td>
<td>Non-exporting IGS</td>
<td>1.400</td>
<td>4 November</td>
</tr>
<tr>
<td></td>
<td>IGS</td>
<td>0.500</td>
<td>19 November</td>
</tr>
<tr>
<td>Just Electric</td>
<td>Demand Response</td>
<td>35.000</td>
<td>5 December</td>
</tr>
<tr>
<td>Sunseap Leasing</td>
<td>Non-exporting IGS</td>
<td>3.860</td>
<td>13 December</td>
</tr>
</tbody>
</table>

With these additions, coupled with capacity revisions and de-registrations of other generation facilities, the total registered capacity of IGS facilities stands at 138.207MW, or 1.1 percent of the total registered generation capacity in the NEMS.

Rule Change Updates

Review of default levy arrangements

In the Singapore Wholesale Electricity Market (SWEM), credit risk is managed by requiring net debtors to provide credit support to cover their estimated trading exposures. In instances of credit support shortfalls – where the defaulting market participants’ (MPs) credit support is insufficient to cover their payment obligations – a default levy process allocates the residual credit risk to all non-defaulting MPs.

EMC conducted a review of the default levy arrangement and proposed rule changes to correct the formulae errors in default levy calculations that were identified during the review. It further elucidated associated definitions and timelines to improve the default levy process.

The rule changes were supported by the Rules Change Panel (RCP) in September 2019 and approved by the Energy Market Authority (EMA) on 7 November 2019. They will come into effect on 15 May 2020.

Removal of requirement for final consent for planned outages

In the outage planning process in the SWEM, MPs were required to obtain the Power System Operator’s (PSO) final approval for planned outages two trading days before the scheduled dates of outage, and the PSO’s final consent four to five hours before the scheduled time of outage.

In practice, the PSO’s final consent did not provide the MPs with any additional assurance operationally and financially, as planned outages that were provided with the PSO’s final consent could still be cancelled or deferred before their scheduled timing, or even recalled during the outages in the event of a system emergency. It was also administratively onerous on the MPs and the PSO due to the tight timelines for them to submit and approve the requests for final consent.

After a review, EMC concluded that the requirement for final approval was sufficient and proposed to remove the requirement for final consent.

The rule change was supported by the RCP in September 2019 and approved by the EMA on 7 November 2019. It took effect on 9 November 2019.

For more details of the above rule changes, please visit EMC’s website.
Market Systems User Group (MSUG)

The bi-monthly MSUG forum was held on 19 December. EMC’s Technology team updated attendees on the following topics:

- Overview of NEMS systems availability year-to-date for FY2019/2020;
- Overview of NEMS systems service desk calls received between December 2018 and November 2019;
- Overview of change releases deployed between December 2018 and November 2019;
- NEMS systems incidents;
- Planned NEMS maintenance;
- Disaster Recovery Preparedness Exercise;
- Status updates on Technology (infrastructure) projects:
  - Network technology refresh; and
  - Tier 3 network segregation.
- Status updates on Technology (applications) projects:
  - Application Programming Interface (API) Gateway Management Solution;
  - Risk exposure report enhancement for display of payment default information;
  - Webservices for additional data release;
  - Review of credit support requirements to align with Retailer of Last Resort (RoLR) framework; and
  - Review of default levy arrangements.

The next MSUG forum is tentatively scheduled for Thursday, 20 February 2020.

EMC Training Programme

Next course on 27 and 28 February 2020

EMC will be holding the next run of its two-day course *Understanding Electricity Markets* on 27 and 28 February 2020. Our staff will be conducting six sessions covering the following topics:

- Understanding Electricity
- Why Reform and Regulation is Essential in the Electricity Industry
- The National Electricity Market of Singapore and its Unique Features
- Pricing Mechanism and Economic Dispatch
- Market Settlement and Credit Risk Management
- How Consumers can Influence Electricity Markets
- The course dates for 2020 are as follows:
  - 27-28 February
  - 14-15 May
  - 20-21 August
  - 19-20 November

We advise you to book early to secure your place in the course date of your choice, and benefit from our early-bird discount where applicable.

Further details on the programme and on how to register are on our website, [www.emcsig.com](http://www.emcsig.com). For enquiries, please e-mail trainingprogramme@emcsig.com or contact Jan Lee at +65 6779 3000.